

U.S. Department of Commerce, Patent and Trademark Office
(PTO Form 1449 modified)

Docket No.
AMAT/6198

Serial No.
10/016,300

LIST OF PATENTS AND PUBLICATIONS CITED BY APPLICANT

Applicant
Tzu, et al.

(Use several sheets if necessary)

Filing Date

Confirmation
No.:
Group 163
Unknown

Examiner Unknown ZERVIGON

December 12, 2001

U.S. Patent Documents

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>RR</i>	A1	4,058,430	11/15/77	Suntola et al.	156	611	11/25/1975
	A2	4,389,973	06/28/83	Suntola et al.	118	725	12/11/1981
	A3	4,413,022	11/01/83	Suntola et al.	427	255.2	06/21/1979
	A4	4,486,487	12/04/84	Skarp	428	216	04/25/1983
	A5	4,767,494	08/30/88	Kobayashi et al.	156	606	09/19/1986
	A6	4,806,321	02/21/89	Nishizawa et al.	422	245	07/21/1985
	A7	4,829,022	05/09/89	Kobayashi et al.	437	107	12/09/1986
	A8	4,834,831	05/30/89	Nishizawa et al.	156	611	09/04/1987
	A9	4,838,983	06/13/89	Schumaker et al.	156	613	03/18/1988
	A10	4,838,993	06/13/89	Aoki et al.	156	643	12/03/1987
	A11	4,840,921	06/20/89	Matsumoto	437	89	06/30/1988
	A12	4,845,049	07/04/89	Sunakawa	437	81	08/28/1988
<i>RR</i>	A13	4,859,625	08/22/89	Nishizawa et al.	437	81	11/20/1987

Foreign Patent Documents

*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
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<i>RR</i>	B1	01/66832 A2	09/13/2001	WO	C23C	16/44	<input type="checkbox"/>	<input type="checkbox"/>
	B2	01/40541 A1	06/07/2001	WO	C23C	16/40	<input type="checkbox"/>	<input type="checkbox"/>
	B3	01/36702 A1	05/25/2001	WO	C23C	16/00	<input type="checkbox"/>	<input type="checkbox"/>
	B4	01/29893 A1	04/26/2001	WO	H01L	21/768	<input type="checkbox"/>	<input type="checkbox"/>
<i>RR</i>	B5	01/29891 A1	04/26/2001	WO	H01L	21/768	<input type="checkbox"/>	<input type="checkbox"/>

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*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.
<i>RR</i>	C1	Hultman, et al., "Review of the thermal and mechanical stability of TiN-based thin films", <i>Zeitschrift Fur Metallkunde</i> , 90(10) (Oct. 1999), pp. 803-813
<i>RR</i>	C2	Klaus, et al., "Atomic Layer Deposition of SiO ₂ Using Catalyzed and Uncatalyzed Self-Limiting Surface Reactions", <i>Surface Review & Letters</i> , 6(3&4) (1999), pp. 435-448

Examiner *RR* Date Considered *6/10/03*

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

U.S. Department of Commerce, Patent and Trademark Office (PTO Form 1449 modified)				Docket No. AMAT/6198	Serial No. 10/016,300	
LIST OF PATENTS AND PUBLICATIONS CITED BY APPLICANT				Applicant Tzu, et al.	Confirmation No.: Unknown	
(Use several sheets if necessary)				Filing Date December 12, 2001	Group 1763 Unknown	
		Examiner <u>Unknown</u> <i>Zervigon</i>				

U.S. Patent Documents

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>DS</i>	A14	4,859,627	08/22/89	Sunakawa	437	81	07/01/1988
	A15	4,861,417	08/29/89	Mochizuki et al.	156	610	03/24/1988
	A16	4,876,218	10/24/89	Pessa et al.	437	107	09/26/1988
	A17	4,927,670	05/22/1990	Erbil	427	255.3	06/22/1988
	A18	4,931,132	06/05/90	Aspnes et al.	156	601	10/07/1988
	A19	4,960,720	10/02/90	Shimbo	437	105	08/24/1987
	A20	4,975,252	12/04/90	Nishizawa et al.	422	245	05/26/1989
	A21	4,993,357	02/19/91	Scholz	118	715	12/21/1989
	A22	5,013,683	05/07/91	Petroff et al.	437	110	01/23/1989
	A23	5,082,798	01/21/92	Arimoto	437	108	09/27/1990
	A24	5,085,885	02/04/92	Foley et al.	477	38	09/10/1990
	A25	5,091,320	02/25/92	Aspnes et al.	437	8	06/15/1990
	A26	5,130,269	07/14/92	Kitahara et al.	437	111	04/25/1989
<i>W</i>	A27	5,166,092	11/24/92	Mochizuki et al.	437	105	10/30/1990

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*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
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<i>DS</i>	B6	01/29280 A1	04/26/2001	WO	H01L	21/00	<input type="checkbox"/>	<input type="checkbox"/>
	B7	01/27347 A1	04/19/2001	WO	C23C	16/44	<input type="checkbox"/>	<input type="checkbox"/>
	B8	01/27346 A1	04/19/2001	WO	C23C	16/44	<input type="checkbox"/>	<input type="checkbox"/>
	B9	01/15220 A1	03/01/2001	WO	H01L	21/768	<input type="checkbox"/>	<input type="checkbox"/>
<i>W</i>	B10	00/79576 A1	12/28/2000	WO	H01L	21/205	<input type="checkbox"/>	<input type="checkbox"/>

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<i>DS</i>	C3	Yamaguchi, et al., "Atomic-layer chemical-vapor-deposition of silicon dioxide films with extremely low hydrogen content", <i>Appl. Surf. Sci.</i> , Vol. 130-132 (1998), pp. 202-207	<input checked="" type="checkbox"/>
	C4	George, et al., "Surface Chemistry for Atomic Layer Growth", <i>J. Phys. Chem.</i> , Vol. 100 (1996), pp. 13121-131	<input checked="" type="checkbox"/>

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(Use several sheets if necessary)		Filing Date December 12, 2001	Group /763 Unknown
	Examiner <u>Unknown</u> <i>Zervigon</i>		

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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>ZJ</i>	A28	5,225,366	07/06/93	Yoder	437	108	06/22/1990
	A29	5,246,536	09/21/93	Nishizawa et al.	156	610	03/10/1989
	A30	5,250,148	10/05/93	Nishizawa et al.	156	611	11/12/1991
	A31	5,254,207	10/19/93	Nishizawa et al.	156	601	11/30/1992
	A32	5,256,244	10/26/93	Ackerman	156	613	02/10/1992
	A33	5,270,247	12/14/93	Sakuma et al.	437	133	07/08/1992
	A34	5,278,435	01/11/94	Van Hove et al.	257	184	06/08/1992
	A35	5,281,274	01/25/94	Yoder	118	697	02/04/1993
	A36	5,290,748	03/01/94	Knuutila et al.	502	228	07/16/1992
	A37	5,294,286	03/15/94	Nishizawa et al.	156	610	01/12/1993
	A38	5,296,403	03/22/94	Nishizawa et al.	437	133	10/23/1992
	A39	5,300,186	04/05/94	Kitahara et al.	156	613	04/07/1992
<i>ZJ</i>	A40	5,311,055	05/10/94	Goodman et al.	257	593	11/22/1991

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<i>ZJ</i>	B11	00/79019 A1	12/28/2000	WO	C23C	16/00	<input type="checkbox"/>	<input type="checkbox"/>
	B12	00/63957 A1	10/26/2000	WO	H01L	21/205	<input type="checkbox"/>	<input type="checkbox"/>
	B13	00/54320A1	09/14/2000	WO	H01L	21/44	<input type="checkbox"/>	<input type="checkbox"/>
	B14	00/16377 A2	03/23/2000	WO	H01L		<input type="checkbox"/>	<input type="checkbox"/>
<i>ZJ</i>	B15	00/15881 A2	03/23/2000	WO	C30B		<input type="checkbox"/>	<input type="checkbox"/>

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<i>ZJ</i>	C5	George, et al., "Atomic layer controlled deposition of SiO ₂ and Al ₂ O ₃ using ABAB... binary reaction sequence chemistry", <i>Appl. Surf. Sci.</i> , Vol. 82/83 (1994), pp. 460-467	BOOK	SEARCHED
<i>ZJ</i>	C6	Wise, et al., "Diethyldethoxysilane as a new precursor for SiO ₂ growth on silicon", <i>Mat. Res. Soc. Symp. Proc.</i> , Vol. 334 (1994), pp. 37-43		

Examiner <i>Zervigon</i>	Date Considered <i>6/10/03</i>
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	Examiner Unknown <i>Benzigon</i>		

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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>RR</i>	A41	5,316,615	05/31/94	Copel	117	95	03/09/1993
	A42	5,316,793	05/31/94	Wallace et al.	427	248.1	07/27/1992
	A43	5,330,610	07/19/94	Eres et al.	117	86	05/28/1993
	A44	5,336,324	08/09/94	Stall et al.	118	719	12/04/1991
	A45	5,338,389	08/16/94	Nishizawa et al.	117	89	04/21/1993
	A46	5,348,911	09/20/94	Jurgensen et al.	117	91	04/26/1993
	A47	5,374,570	12/20/94	Nasu et al.	437	40	08/19/1993
	A48	5,395,791	03/07/95	Cheng et al.	437	105	10/20/1993
	A49	5,438,952	08/08/1995	Otsuka	117	84	01/31/1994
	A50	5,439,876	08/08/95	Graf et al.	505	447	08/16/1993
	A51	5,441,703	08/15/95	Jurgensen	422	129	03/29/1994
	A52	5,443,033	08/22/95	Nishizawa et al.	117	86	03/11/1994
	A53	5,443,647	08/22/95	Aucoin et al.	118	723 ME	07/11/1994
<i>✓</i>	A54	5,455,072	10/03/95	Bension et al.	427	255.7	11/18/1992

Foreign Patent Documents

*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
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<i>RR</i>	B16	00/15865	03/23/2000	WO	C23C	16/00	<input type="checkbox"/>	<input type="checkbox"/>
	B17	99/41423	08/19/1999	WO	C23C		<input type="checkbox"/>	<input type="checkbox"/>
<i>✓</i>	B18	99/29924	06/17/1999	WO	C23C	16/04	<input type="checkbox"/> SEP 2001	<input type="checkbox"/> RECEIVED

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<i>RR</i>	C7	Niinisto, et al., "Synthesis of oxide thin films and overlayers by atomic layer epitaxy for advanced applications", <i>Mat. Sci. & Eng.</i> , Vol. B41 (1996), pp. 23-29	25/01/2002
<i>RR</i>	C8	Ritala, et al., "Perfectly conformal TiN and Al ₂ O ₃ films deposited by atomic layer deposition", <i>Chemical Vapor Deposition</i> , Vol. 5(1) (January 1999), pp. 7-9	

Examiner *Judy Heyn* Date Considered **6/10/03**

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	Examiner Unknown <i>Zervigon</i>		

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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>DR</i>	A55	5,458,084	10/17/95	Thorne et al.	117	89	12/09/1993
	A56	5,469,806	11/28/95	Mochizuki et al.	117	97	08/20/1993
	A57	5,480,818	01/02/96	Matsumoto et al.	437	40	02/09/1993
	A58	5,483,919	01/16/96	Yokoyama et al.	117	89	08/17/1994
	A59	5,484,664	01/16/96	Kitahara et al.	428	641	01/21/1994
	A60	5,503,875	04/02/96	Imai et al.	427	255.3	03/17/1994
	A61	5,521,126	05/28/96	Okamura et al.	437	235	06/22/1994
	A62	5,527,733	06/18/96	Nishizawa et al.	437	160	02/18/1994
	A63	5,532,511	07/02/96	Nishizawa et al.	257	627	03/23/1995
	A64	5,540,783	07/30/96	Eres et al.	118	725	05/26/1994
	A65	5,601,651	02/11/97	Watabe	118	715	12/14/1994
	A66	5,616,181	04/01/97	Yamamoto et al.	118	723 ER	11/21/1995
<i>DR</i>	A67	5,637,530	06/10/97	Gaines et al.	114	105	06/10/1996

Foreign Patent Documents

*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
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<i>DR</i>	B19	96/18756	06/20/1996	WO	C23C	16/08	<input type="checkbox"/>	<input type="checkbox"/>
	B20	96/17107	06/06/1996	WO	C23C	16/44	<input type="checkbox"/>	<input type="checkbox"/>
	B21	93/0211	02/04/1993	WO	C08F	4/78	<input type="checkbox"/>	<input type="checkbox"/>
<i>DR</i>	B22	91/10510	07/25/1991	WO	B01J	37/02	<input type="checkbox"/>	<input type="checkbox"/>

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*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.	700 MAIL ROOM	RECEIVED
<i>DR</i>	C9	Klaus, et al., "Atomically controlled growth of tungsten and tungsten nitride using sequential surface reactions". <i>Appl. Surf. Sci.</i> , Vol 162-163 (July 1999), pp. 479-491	2/27/01	2/27/01
<i>DR</i>	C10	Klaus, et al., "Atomically controlled growth of tungsten and tungsten nitride using sequential surface reactions", <i>Fifth Int'l Symp. On Atomically Controlled Surfaces, Interfaces and Nanostructures</i> (July 6-9, 1999), Aix-en Provence, France		

Examiner *Andy Zervigon* Date Considered *6/10/01*

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	Examiner Unknown <i>Zervigon</i>		

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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>RD</i>	A68	5,641,984	06/24/97	Aftergut et al.	257	433	08/19/1994
	A69	5,644,128	07/01/97	Wollnik et al.	250	251	08/25/1994
	A70	5,693,139	12/02/97	Nishizawa et al.	117	89	06/15/1993
	A71	5,705,224	01/06/98	Murota et al.	427	248.1	01/31/1995
	A72	5,707,880	01/13/98	Aftergut et al.	437	3	01/17/1997
	A73	5,711,811	01/27/98	Suntola et al.	118	711	11/28/1995
	A74	5,730,802	03/24/98	Ishizumi et al.	118	719	12/27/1996
	A75	5,747,113	05/05/98	Tsai	427	255.5	07/29/1996
	A76	5,749,974	05/12/98	Habuka et al.	118	725	07/13/1995
	A77	5,796,116	08/18/98	Nakata et al.	257	66	07/25/1995
	A78	5,807,792	09/15/98	Ilg et al.	438	758	12/18/1996
	A79	5,830,270	11/03/98	McKee et al.	117	106	08/05/1996
<i>✓</i>	A80	5,835,677	11/10/98	Li et al.	392	401	10/03/1996

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*Examiner Initial		Document Number	Date	Country	Class	Subclass	Translation	
							YES	NO
<i>RD</i>	B23	0 799 641 A2	10/08/1997	EP	B01J	20/32	<input type="checkbox"/>	<input type="checkbox"/>
	B24	0 442 290 A1	02/14/1991	EP	C30B	25/02	<input type="checkbox"/>	<input type="checkbox"/>
	B25	0 344 352 A1	06/03/1988	EP	H01L	39/24	<input type="checkbox"/>	<input type="checkbox"/>
<i>✓</i>	B26	62-091,495	04/25/1987	JP	C30B	25/02	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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<i>RD</i>	C11	Min, et al., "Atomic layer deposition of TiN thin films by sequential introduction of Ti precursor and NH ₃ ", Symp.: <i>Advanced Interconnects and Contact Materials and Processes for Future Integrated Circuits</i> (Apr. 13-16, 1998), pp. 337-342	
<i>RD</i>	C12	Min, et al., "Metal-Organic Atomic-Layer Deposition of Titanium-Silicon-Nitride Films", <i>Applied Physics Letters</i> , American Inst. Of Physics, Vol 75(11) (Sept. 13, 1999)	
Examiner <i>RD</i>		Date Considered <i>6/10/03</i>	

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	Examiner <i>Unknown</i> <i>Zervigon</i>	1703	

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<i>TZ</i>	A81	5,851,849	12/22/98	Comizzoli et al.	438	38	05/22/1997
	A82	5,855,675	01/05/99	Doering et al.	118	719	03/03/1997
	A83	5,855,680	01/05/99	Soininen et al.	118	719	11/28/1995
	A84	5,858,102	01/12/99	Tsai	118	719	02/14/1998
	A85	5,879,459	03/09/99	Gadgil et al.	118	715	08/29/1997
	A86	5,904,565	05/18/1999	Nguyen, et al.	438	687	07/17/1997
	A87	5,916,365	06/29/99	Sherman	117	92	08/16/1996
	A88	5,923,056	07/13/99	Lee et al.	257	192	03/12/1998
	A89	5,923,985	07/13/99	Aoki et al.	438	301	01/14/1997
	A90	5,925,574	07/20/99	Aoki et al.	437	31	04/10/1992
	A91	5,942,040	08/24/99	Kim et al.	118	726	08/27/1997
	A92	5,947,710	09/07/1999	Cooper, et al.	418	63	06/16/1997
<i>✓</i>	A93	5,972,430	10/26/99	DiMeo, Jr. et al.	427	255.32	11/26/1997

Foreign Patent Documents

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<i>TZ</i>	B27	60-065712A	04/15/1985	JP	C01B	33/113	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B28	03-048421	03/01/1991	JP	H01L	21/302	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.	RECEIVED U.S. PATENT AND TRADEMARK OFFICE SEP 26 2000
<i>RZ</i>	C13	Maertensson, et al., "Atomic Layer Epitaxy of Copper on Tantalum", <i>Chemical Vapor Deposition</i> , 3(1) (Feb. 1, 1997), pp. 45-50	000
	C14	Ritala, et al. "Atomic Layer Epitaxy Growth of TiN Thin Films", <i>J. Electrochem. Soc.</i> , 142(8) (Aug. 1995), pp. 2731-737	
	C15	Elers, et al., "NbC15 as a precursor in atomic layer epitaxy", <i>Appl. Surf. Sci.</i> , Vol. 82/83 (1994), pp. 469-474	

Examiner *Zervigon* Date Considered *6/6/03*

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	Examiner <i>Unknown Zeru Duan</i>		

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<i>ZD</i>	A94	6,001,669	12/14/99	Gaines et al.	438	102	07/21/1992
	A95	6,015,590	01/18/00	Suntola et al.	427	255.23	11/28/1995
	A96	6,025,627	02/15/00	Forbes et al.	257	321	05/29/1998
	A97	6,036,773	03/14/00	Wang et al.	117	97	03/27/1997
	A98	6,042,652	03/28/00	Hyun et al.	118	719	09/07/1999
	A99	6,043,177	03/28/00	Falconer et al.	502	4	01/21/1997
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							YES	NO
<i>ZD</i>	B30	04-031396	02/03/1992	JP	C30B	25/14	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Examiner <i>Prudy Jeon</i>	Date Considered <i>6/20/03</i>							
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